

CLAIMS

1. A photoelectric transducer comprising a first pin junction part including:

a first p-layer;

5 a first n-layer disposed so as to oppose the first p-layer; and

a first i-layer, disposed between the first p-layer and first n-layer, containing an iron atom, a silicon atom bonded to the iron atom, and a hydrogen atom.

10 2. A photoelectric transducer according to claim 1, wherein the first i-layer is formed by at least partly bonding the hydrogen atom to the silicon atom or iron atom.

3. A photoelectric transducer according to claim 1 or 2, wherein the first i-layer is mainly amorphous.

15 4. A photoelectric transducer according to one of claims 1 to 3, wherein the first i-layer has a hydrogen atom content of 1 to 25 atom %.

20 5. A photoelectric transducer according to one of claims 1 to 4, wherein the first pin junction part further comprises a second i-layer disposed between the first p-layer and first n-layer and constituted by a mainly amorphous silicon film.

6. A photoelectric transducer according to one of claims 1 to 4, further comprising a second pin junction part, disposed in series with the first pin junction part, including:

a second p-layer;

25 a second n-layer disposed so as to oppose the second p-layer; and

a third i-layer disposed between the second p-layer and second n-layer and made of an amorphous silicon film.

7. A photoelectric transducer apparatus comprising:

a substrate;

5 a first electrode layer disposed on one side of the substrate;

a second electrode layer disposed so as to oppose the first electrode layer; and

10 a first pin junction part including a first n-layer formed on the first electrode layer, a first p-layer formed on one side of the second electrode layer so as to oppose the first n-layer, and a first i-layer, disposed between the first p-layer and first n-layer, containing an iron atom, a silicon atom bonded to the iron atom, and a hydrogen atom.

8. An iron silicide film for constructing an i-layer in a pin junction;

15 the iron silicide film containing an iron atom, a silicon atom bonded to the iron atom, and a hydrogen atom while being mainly amorphous.